

**SONY®**

High Definition Video System

**Digital HDVS**

**HDCAM HDW-700A**



**T**he HDW-700A camcorder is the triumphant result of over 20 years of development in High Definition imaging and recording. Since 1981, when Sony introduced their first High Definition Video System (HDVS), the video production industry has been anticipating the potential of an all-electronic image capture system that can rival the look of the best of 35mm motion picture film.

There have been several milestones since then, including the 1984 debut of the 1-inch Saticon tube High Definition camera (HDC-100) and an analog 1-inch HD VTR (HDV-1000) that demonstrated the first practical application of experimental HD production in various regions of the globe. Soon after, in 1988, Sony brought out a more compact second-generation camera (HDC-300), followed shortly thereafter by the world's first all-digital 1-inch HD VTR (the widely reputed HDD-1000). Finally, in 1992, Sony gave their HD camera solid state CCD imaging power and the first CCD HD camera, the 1-inch HDC-500, was created. The maturing international HD marketplace soon expressed the need for a far more mobile battery-operated program acquisition system. In 1994, Sony responded by launching an extensive development program to achieve the world's first all-digital HD one-piece camcorder. That quest culminated in the new HDCAM digital recording format which was introduced to the broadcast world in 1997.

The HDCAM system is comprised of the HDW-700A camcorder and an associated studio editing VTR, the HDW-500. The HDW-700A camcorder features three 2-million pixel CCDs and a sophisticated DSP HD camera video processing (both developed by Sony), physically integrated with an unusually rugged yet miniature digital HD VTR using BETACAM-size 1/2-inch tape. This significant technical achievement has already been recognized by Sony's receipt of the Award of Motion Picture and Television Engineering Society of Japan, and the Award of Technical Advancement from the Institute of Image Information and Television Engineers.

The independent production community has eagerly recognized the enormous potential of the HDW-700A. They now have a compact all-digital battery-powered HD camcorder for high-end program acquisition on remote locations which inherits all of the operational advantages of the well accepted Digital BETACAM format in addition to many new HD functions. The HDW-700A incorporates Sony's digital processing technologies, enabling 40 minutes of cost-effective digital HD video recording in the camcorder, with two 16-Bit digital audio channels facilitating high quality sync sound in the field. The instant HD color playback directly from the camcorder is a boon for those needing to screen their "dailies" while shooting in remote locations. In addition, miniature pre-programmable memory cards that plug into the side of the HDW-700A allow HD videographers to instantly set the "look" of their HD image. This can be vital for providing instant recall of a special adjustment made on a prior shoot, rapid matching to another camcorder, or allowing the emulation of known film stocks. With the HDW-700A, Digital Electronic Cinematography has, at last, become a reality.

As the U.S. broadcast industry meets the challenge of an accelerating transition to DTV, the advent of this cost-effective HDCAM acquisition system offers an immediate and convenient means of creating high quality HD programming. From sports to entertainment, from documentaries to dramas, and from local news coverage to major international events, the HDW-700A gives you the power to capture the superb widescreen panoramic pictures that typify the new imaging splendor of HDTV.



HDW-700A shown



# Benefits

The same size and ergonomic design as the Digital BETACAM camcorder.

A robust mechanism design based on Sony's experience with several generations of EFP products.





**A** newly designed CCD imaging system.  
(1920 x 1080i signal)

**L**onger recording time of  
40 minutes per one S cassette.

**40min**



**35mm** film-like picture quality at a fraction of the cost.



# Features

## Camera Section

### Revolutionary HD CCD

Extraordinary picture quality is achieved while offering F8 at 2000 Lux sensitivity, signal-to-noise ratio of 54 dB, and a virtually invisible smear level of -120 dB as a result of newly developed FIT HD CCD with 2,000,000 picture elements.

### HD lens or conventional 2/3" lens mountable

Either an HD lens or conventional 2/3" lens can be mounted allowing the conventional lens now being used everyday on all Sony SDTV portable cameras and BETACAM camcorders to be used with the HDW-700A for an easier migration to DTV.

### HD DSP technology

Sony's original HD DSP (Digital Signal Processing) processing technology in the circuits after VA (Video Amplifier) such as gamma, detail, knee and encoding processing. This offers all the refined benefits of digital stability.

### Extended operation time

Long continuous operation time is achieved as a result of newly developed low-power-consumption CCD drive circuit and Sony's low-power high-speed CMOS DSP technology.

### Advanced imaging adjustments

High Definition picture quality emulating that of a studio camera can be obtained by the Sony advanced HD DSP camera processing, which offers a variety of important creative picture adjustments, such as skin tone detail control, variable linear matrix, and black gamma control.

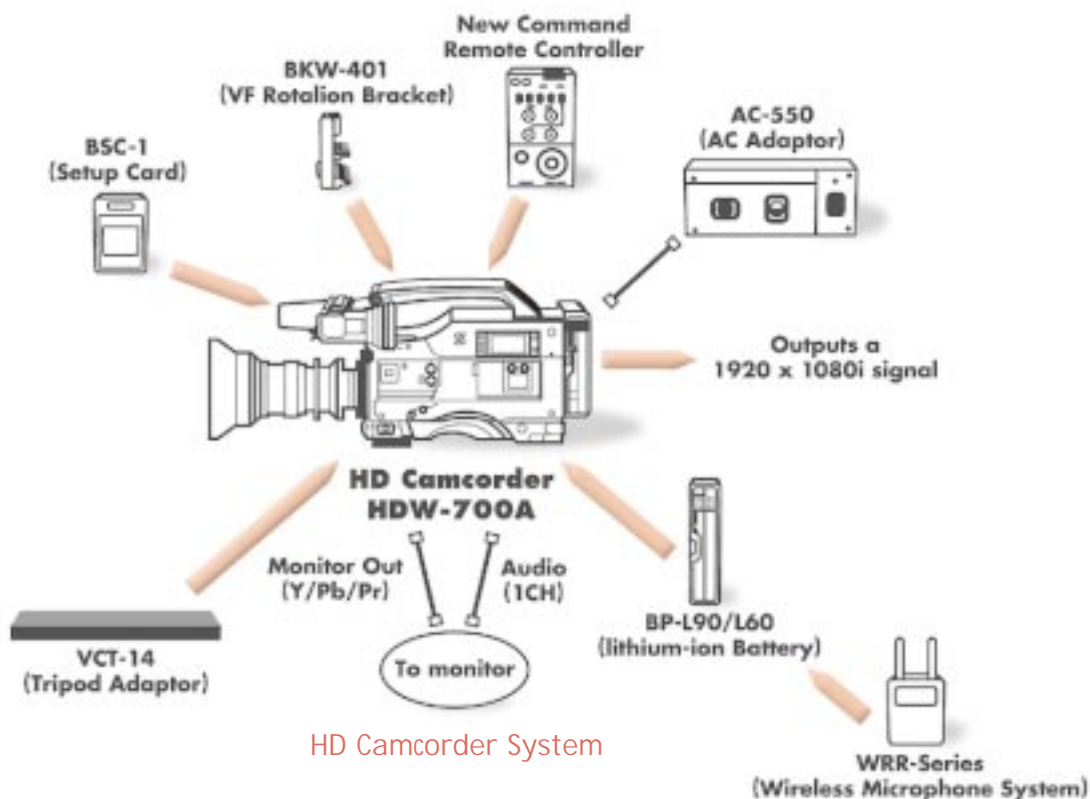
### Setup card

The parameters of the reference and operator file can be stored on the Setup Card. The Setup card also allows an instant setup of the HDW-700A to the specific conditions preset on the Setup Card. The Setup card capability also enables the transfer of camera information between HDW-700A's to allow field camera matching. This convenient function adds great flexibility and dramatically improves operating efficiency.



### HDVF-20 2-inch viewfinder

The HDVF-20 2-inch viewfinder is supplied as a standard accessory. The viewfinder utilizes a 16:9 aspect ratio CRT with an on-screen 4:3 safe area generator to aid in producing HD material that may be later down converted for 4:3 release.



### Powerful electronic shutter

A variety of shutter functions are available for on-location imaging control. Clear Scan and ECS (Extended Clear Scan) can be utilized to control the vertical scanning rate and EVS (Enhanced Vertical Definition System) is offered to allow a significant improvement in vertical definition where motion blur is not a consideration.

### Multi-systems

Switchable field frequency between 59.94 Hz or 60 Hz to facilitate operation in all anticipated broadcast and post production environments.

# Features

## VTR Section

### Longer recording time

The HDW-700A adopts Sony's HDCAM format to provide an extended recording time of 40 minutes for EFP, EC, and ENG applications.

The HDCAM format utilizes a new high-density recording method, which, in combination with the newly developed HD Digital Bit Rate Reduction Technology, enables the HDW-700A to record 40 minutes per one S cassette also contributing to a considerable cost savings compared to 35mm or 16mm film.

### Ergonomic layout

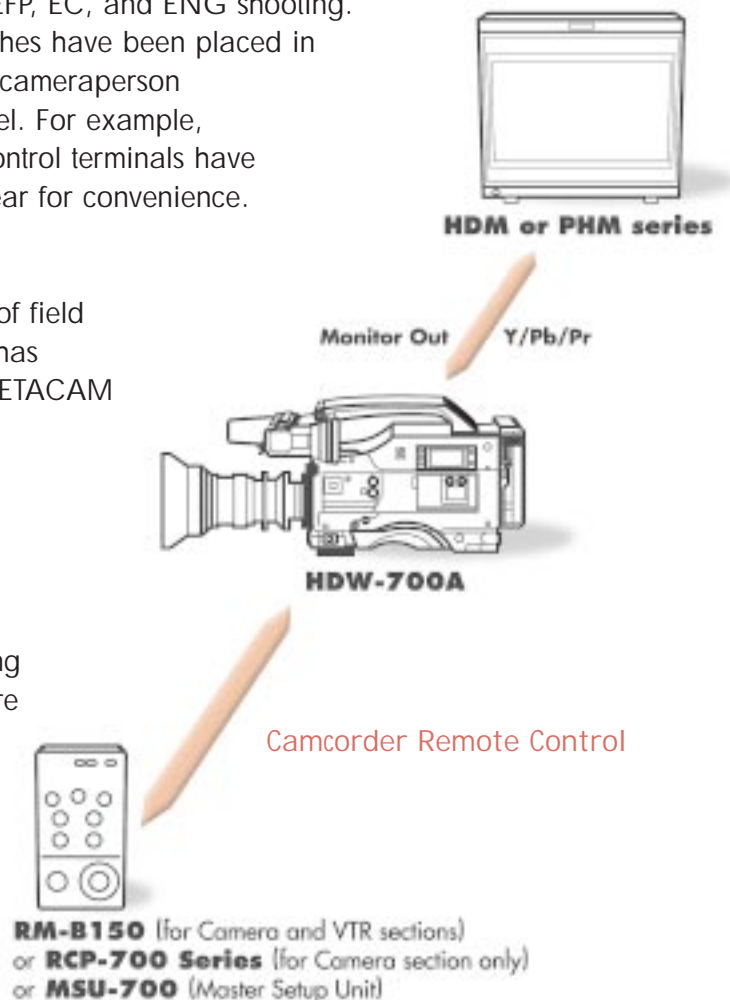
The arrangement of connectors and control switches has been carefully designed for the needs of high definition EFP, EC, and ENG shooting.

Connectors and control switches have been placed in optimal positions, giving the cameraperson a comfortable operational feel. For example, the frequently used remote control terminals have been relocated toward the rear for convenience.

### Robust design

In order to survive the stress of field production, the HDW-700A has retained the proven Digital BETACAM camcorder's design concept, including a dust-proof, water resistant, and mechanically robust body.

This, in combination with the unique HDCAM recording format, ensures high recording integrity under the most severe environment conditions.





### External reference signals

The HDW-700A's built-in time code generator can be locked to an external time code signal for multi-system operation.

### Camera and VTR control available from the RM-B150

For the first time, both the camera and VTR sections of a professional camcorder can be remotely controlled. This unique function of the HDW-700A/RM-B150 combination is useful where confirmation playback is desired when the HDW-700A is used in limited access situations such as when mounted in a housing or used on a jib arm.

### Full color video and audio monitoring

High quality color HD component video and audio playback are provided directly from the camcorder without an external adapter for in-the-field viewing of dailies.

### High fidelity sound recording

Two channels for 16-bit digital audio input ensure high fidelity sync sound recording in the field.

### Time code flexibility

The HDW-700A inherits all the SMPTE time code features of the DVW-700WS Digital BETACAM Camcorder, such as LTC and VITC recording as well as LTC playback.



HDW-700A shown

# Specifications

## HDW-700A

### (General)

<b>Dimensions:</b>	140 (W) x 265 (H) x 340 (D) mm (5 5/8 x 10 1/2 x 13 1/2 inches)
<b>Mass:</b>	Approx. 8.0 kg (16.53 lbs) (Operating Weight with Lens, Cassette, and Battery)
<b>Power requirements:</b>	DC 12 V +5.0/-1.0 V
<b>Power consumption:</b>	Approx. 40 W
<b>Operating temperature:</b>	0°C to +40°C (+32°F to +104°F)
<b>Storage temperature:</b>	-20°C to +60°C (-4°F to +140°F)
<b>Humidity:</b>	25 to 85% (relative humidity)
<b>Continuous record time:</b>	Approx. 120 min. (with one BP-L90) or 80 min. (with one BP-L60)

### (Inputs/outputs)

<b>Genlock video input:</b>	BNC
<b>Time code input:</b>	BNC
<b>Time code output:</b>	BNC
<b>Monitor out:</b>	BNC x 3 (Y/Pb/Pr)
<b>Camera mic in:</b>	XLR 3-pin
<b>Mic/line in:</b>	XLR 3-pin x 2
<b>Audio monitor out:</b>	XLR 3-pin
<b>Earphone out:</b>	Mini jack
<b>Lens:</b>	12-pin
<b>Viewfinder:</b>	20-pin
<b>Remote:</b>	8-pin
<b>DC input:</b>	XLR 4-pin
<b>DC output:</b>	4-pin (for WRR-860A only)



HDW-700A shown

## Optional accessories



Setup Card  
(Package of four Setup Cards and a soft case)

**BSC-1-Pack**



Rechargeable Lithium-ion Battery  
**BP-L90A**

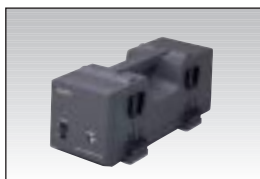


Rechargeable Lithium-ion Battery  
**BP-L60A**



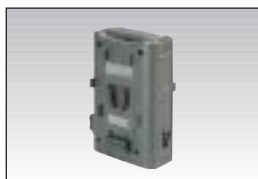
Battery Case for an optional BP-90A NiCd Battery

**DC-L90**



Battery Charger for four BP-L60/A and BP-L90/A

**BC-L100**



Battery Charger for two BP-L40 and L60/A

**BC-L50**



Battery Charger for four BP-90A

**BC-410**



AC Adaptor  
**AC-DN2A**



AC Adaptor  
**AC-550**



Slot-in Wireless Microphone Receiver  
**WRR-860A**



Remote Control Unit  
**RM-B150**



Viewfinder Rotation Bracket  
**BKW-401**



Carrying Case  
**LC-HD7**



Video Head Cleaning Cassette  
**BCT-HD12CL**



HDCAM Video Cassette  
**BCT-40HD/22HD**

## Supplied accessories

2-inch HD view finder (HDVF-20) (1)  
Setup card (BSC-1) (1)  
Tripod adaptor (VCT-14) (1)  
Attachment adaptor for wireless microphone receiver (1)  
Shoulder belt (1)  
Microphone (1)

Rain cover (1)  
Lens cap (1)  
Operation manual (1)  
Maintenance manual (1)



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